

REMARKS

Claims 1-7, 9, 11-20 and 22-49 are pending in the application. Of these claims, claims 12-20, 22, 23 and 30-33 are withdrawn from consideration. Claim 49 is added. Claims 8, 10 and 21 were previously cancelled. Claims 34-48 were previously added.

Claim 11 is objected to for disclosing a feature having a lack of antecedent basis. Claim 11 is amended to overcome the objection.

Claims 1-4, 9, 11, 24, 28, 29, 34-36, 39, 41, 42 and 46-48 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,327,016 to Yamada et al., hereinafter "Yamada". Claims 1, 11, 34 and 48 are independent. Applicants respectfully traverse this rejection.

Claim 1 provides a liquid crystal device including a first cell wall and a second cell wall enclosing a layer of liquid crystal material, electrodes for applying an electric field across at least some of the liquid crystal material, and a surface alignment structure on the inner surface of at least the first cell wall providing a single desired uniform alignment to a liquid crystal director. The alignment is planar, tilted or homeotropic. The surface alignment structure includes a two dimensional array of alignment posts which are formed from a photoresist material or a plastics material, and which are shaped and oriented to produce the desired alignment.

Yamada discloses an Axially Symmetrically-aligned Microcell (ASM) mode liquid crystal display that provides wide viewing angle characteristics by reducing variations in contrast at different viewing angles. This is achieved by constructing the cell to have an array of small domains, i.e., microcells. Within each microcell, the liquid crystal molecules have a tilted alignment that is axially symmetrical about a central axis perpendicular to the plane of the cell walls. This alignment is achieved by using protrusion-like structures which have sloping side walls and which are treated with a vertical alignment layer to induce adjacent liquid crystal molecules to align vertically with

respect to the local plane of the sloping side wall. Thus, the tilt angle of the liquid crystal molecules relative to the plane of the cell walls is determined by the slope of the side walls in the absence of an electric field. A liquid crystal material of negative dielectric anisotropy is used so that when a field is applied, the liquid crystal molecules tend to align parallel to the plane of the cell walls. Yamada also discloses a pit region at the top of each protrusion-like structure, which provides axially-symmetrical alignment of the liquid crystal molecules at the top portion of the protrusion-like structures.

Page 8 of the Office Action contends that orientation of liquid crystal molecules over side wall 11a of a protrusion-like structure constitute a single desired uniform alignment as claimed by Applicants. Applicants respectfully disagree.

Figure 3 of Yamada discloses liquid crystal molecules oriented over side wall 11a of a single protrusion-like structure. However, Yamada does not disclose that the liquid crystal molecules have a single uniform alignment provided by an array of alignment posts. The uniform alignment provided in claim 1 is produced **by an array of posts**, in contrast to the alignment cited by the Office Action, which is produced by **a single structure**.

Furthermore, claim 1 states that the surface alignment structure provides a single desired uniform alignment to a liquid crystal director, and that the alignment is selected from the group consisting of **planar, tilted and homeotropic**. Yamada does not disclose a structure providing alignment of these types. In the ASM mode display of Yamada, it is required that the alignment varies across each microcell of the display. This is a fundamental requirement of the ASM mode and is necessary to achieve its wide viewing angle characteristics; nothing in Yamada would therefore suggest that this teaching could be modified. As indicated in the preceding paragraph, far from being induced as a single liquid crystal alignment, the alignment in Yamada varies from one protrusion-like structure to any adjacent protrusion-like structure. The recitation in claim 1 that the alignment is selected from the group consisting of planar, tilted and

homeotropic makes clear the distinction between the arrangement of claim 1 from that of Yamada, with its local alignment induced discretely at each protrusion-like structure.

Therefore, Yamada does not disclose a liquid crystal device having "a surface alignment structure on the inner surface of at least said first cell wall providing a **single desired uniform alignment** to a liquid crystal director, said alignment selected from the group consisting of **planar, tilted and homeotropic**; wherein said surface alignment structure comprises a **two dimensional array of alignment posts** which are formed from a material selected from the group consisting of a photoresist material and a plastics material, and which are shaped and oriented to produce the desired alignment," as recited in claim 1. Thus, Yamada fails to disclose or suggest the elements of claim 1. Accordingly, claim 1 is patentable over Yamada.

Claims 2-4, 9, 24, 28 and 29 depend from claim 1. For at least reasoning similar to that provided in support of claim 1, claims 2-4, 9, 24, 28 and 29 are patentable over Yamada.

Claims 11, 34 and 48 recite features similar to those recited in claim 1. For at least reasoning similar to that provided in support of the patentability of claim 1, claims 11, 34 and 48 are patentable over Yamada.

Claims 35, 36, 39, 41, 42, 46 and 47 depend from claim 34. For at least reasoning similar to that provided in support of claim 34, claims 35, 36, 39, 41, 42, 46 and 47 are patentable over Yamada.

For the reasons set forth above, the rejection of 1-4, 9, 11, 24, 28, 29, 34-36, 39, 41, 42 and 46-48 under 35 U.S.C. 102(e) as anticipated by Yamada is overcome. Applicants respectfully request that the rejection of claims 1-4, 9, 11, 24, 28, 29, 34-36, 39, 41, 42 and 46-48 be reconsidered and withdrawn.

Claims 7 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada in view of Japanese Patent No. 5-249463, hereinafter "JP'463". Claim 7 depends from claim 1, and claim 40 depends from claim 34. Applicants respectfully traverse this rejection.

As discussed above, Yamada fails to disclose or suggest the elements of claim 1. Applicants do not believe that JP'463 makes up for the deficiencies of Yamada, as they apply to claim 1. Therefore, neither Yamada nor JP'463, whether considered alone or in combination, discloses or suggests the elements of claim 1. Thus, claim 1 is patentable over the cited combination of Yamada and JP'463.

Claim 34 includes recitals similar to those of claim 1. For at least reasoning similar to that provided in support of the patentability of claim 1, claim 34 is patentable over the cited combination of Yamada and JP'463.

Claim 7 depends from claim 1, and claim 40 depends from claim 34. For at least reasoning similar to that provided in support of claims 1 and 34, claims 7 and 40 are patentable over the cited combination of Yamada and JP'463.

For the reasons set forth above, the rejection of claims 7 and 40 under 35 U.S.C. 103(a) as unpatentable over Yamada in view of JP'463 is overcome. Applicants respectfully request that the rejection of claims 7 and 40 be reconsidered and withdrawn.

Claims 25-27 and 43-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada. Claims 25-27 depend from claim 1, and claims 43-45 depend from claim 34. Applicants respectfully traverse this rejection.

As discussed above, Yamada fails to disclose or suggest the elements of claim 1. Thus, claim 1 is patentable over Yamada.

Claim 34 includes recitals similar to those of claim 1. For at least reasoning similar to that provided in support of the patentability of claim 1, claim 34 is patentable over Yamada.

Claims 25-27 depend from claim 1, and claims 43-45 depend from claim 34. For at least reasoning similar to that provided in support of claims 1 and 34, claims 25-27 and 43-45 are patentable over Yamada. Applicants respectfully request that the rejection of claims 25-27 and 43-45 be reconsidered and withdrawn.

Claims 5, 6, 37 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada in view of U.S. Patent No. 4,232,947 to Funada et al., hereinafter "Funada". Claims 5 and 6 depend from claim 1, and claims 37 and 38 depend from claim 34. Applicants respectfully traverse this rejection.

As discussed above, Yamada fails to disclose or suggest the elements of claim 1. Applicants do not believe that Funada makes up for the deficiencies of Yamada, as they apply to claim 1. Therefore, neither Yamada nor Funada, whether considered alone or in combination, discloses or suggests the elements of claim 1. Thus, claim 1 is patentable over the cited combination of Yamada and Funada.

Claim 34 includes recitals similar to those of claim 1. For at least reasoning similar to that provided in support of the patentability of claim 1, claim 34 is patentable over the cited combination of Yamada and Funada.

Claims 5 and 6 depend from claim 1, and claims 37 and 38 depend from claim 34. For at least reasoning similar to that provided in support of claims 1 and 34, claims 5, 6, 37 and 38 are patentable over the cited combination of Yamada and Funada.

For the reasons set forth above, the rejection of claims 5, 6, 37 and 38 under 35 U.S.C. 103(a) as unpatentable over Yamada in view of Funada is overcome. Applicants

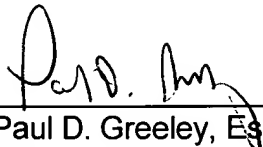
respectfully request that the rejection of claims 5, 6, 37 and 38 be reconsidered and withdrawn.

An indication of the allowability of all pending claims by issuance of a Notice of Allowability is earnestly solicited.

Respectfully submitted,

Date

6/21/06



Paul D. Greeley, Esq.
Reg. No. 31,019
Attorney for the Applicants
Ohlandt, Greeley, Ruggiero & Perle, L.L.P.
One Landmark Square, 10th Floor
Stamford, CT 06901-2682
Tel: 203-327-4500
Fax: 203-327-6401